Analysis of High Cost Support at Selected Income Levels

State	Total Support for 100% CBGs *	Total Support for Bottom 90%	% Difference (100%-90%)/100%	Total Support for Bottom 70%	% Difference (100%-70%)/100%	Total Support for Bottom 50%	% Difference (100%-50%)/100%
Minnesota							
$40 benchmark	$125,519,746	$124,006,166	1.2%	$114,743,408	8.6%	$87,825,843	30.0%
$30 benchmark	$192,788,716	$187,646,156	2.7%	$166,474,499	13.6%	$124,241,450	35.6%
$20 benchmark	$329,231,659	$308,291,331	6.4%	$253,399,823	23.0%	$182,516,926	44.6%
HH Income	$30,909	$48,750		$35,282		$28,036	
Mississippi							
$40 benchmark	$92,713,783	$89,987,899	2.9%	$75,324,097	18.8%	$51,932,598	44.0%
$30 benchmark	$157,912,848	$149,651,058	5.2%	$121,885,589	22.8%	$82,448,821	47.8%
$20 benchmark	$253,971,695	$234,493,387	7.7%	$186,111,878	26.7%	$126,135,225	50.3%
HH Income	$20,136	$33,125		$23,194		$18,920	
Missouri							
$40 benchmark	$175,081,457	$172,514,535	1.5%	$151,478,675	13.5%	$108,563,900	38.0%
$30 benchmark	$256,866,861	$249,315,074	2.9%	$212,068,172	17.4%	$149,705,764	41.7%
$20 benchmark	$423,818,132	$391,240,470	7.7%	$312,841,063	26.2%	$216,068,718	49.0%
HH Income	$26,362	$41,027		$29,228		$22,679	
Montana							
$40 benchmark	$55,338,185	$50,958,921	7.9%	$39,833,923	28.0%	$27,335,944	50.6%
$30 benchmark	$72,177,350	$66,169,948	8.3%	$50,898,687	29.5%	$34,222,707	52.6%
$20 benchmark	$99,429,580	$90,163,247	9.3%	$68,333,776	31.3%	$45,188,978	54.6%
HH Income	$22,988	$35,000		$26,750		$22,135	
Nebraska							
$40 benchmark	$71,445,601	$70,249,030	1.7%	$57,910,010	18.9%	$41,198,819	42.3%
$30 benchmark	$99,355,252	$96,409,092	3.0%	$78,488,365	21.0%	$55,727,021	43.9%
$20 benchmark	$149,255,436	$139,449,430	6.6%	$110,340,276	26.1%	$77,076,289	48.4%
HH Income	$26,016	$39,769		$28,438		$23,750	
Nevada							
$40 benchmark	$34,196,875	$32,222,047	5.8%	$26,893,125	21.4%	$19,538,804	42.9%
$30 benchmark	$47,574,874	$44,157,121	7.2%	$35,088,855	26.2%	$24,637,007	48.2%
$20 benchmark	$83,727,699	$77,672,376	7.2%	$59,151,907	29.4%	$39,822,845	52.4%
HH Income	$31,011	$50,498		$38,659		$31,023	
New Hampshire							
$40 benchmark	$38,727,493	$36,156,715	6.6%	$28,218,719	27.1%	$16,636,050	57.0%
$30 benchmark	$65,434,007	$59,411,365	9.2%	$44,744,226	31.6%	$28,860,215	55.9%
$20 benchmark	$106,138,535	$94,723,041	10.8%	$70,122,850	33.9%	$44,863,394	57.7%
HH Income	$36,329	$52,177		$40,417		$34,375	
New Jersey							
$40 benchmark	$17,362,688	$16,223,341	6.6%	$10,976,443	36.8%	$5,777,982	66.7%
$30 benchmark	$60,829,712	$54,673,352	10.1%	$36,642,883	39.8%	$20,061,778	67.0%
$20 benchmark	$233,915,933	$206,902,505	11.5%	$143,244,506	38.8%	$86,513,583	63.0%
HH Income	$40,927	$68,043		$50,305		$40,363	
New Mexico							
$40 benchmark	$65,674,198	$63,073,967	4.0%	$53,661,471	18.3%	$41,586,961	36.7%
$30 benchmark	$88,829,008	$84,080,997	5.3%	$69,902,719	21.3%	$52,731,102	40.6%
$20 benchmark	$135,968,308	$125,241,825	7.9%	$100,139,007	26.4%	$71,898,392	47.1%
HH Income	$24,087	$39,896		$27,321		$21,463	
New York							
$40 benchmark	$166,623,794	$163,102,380	2.1%	$151,936,672	8.8%	$115,217,851	30.9%
$30 benchmark	$307,167,667	$292,269,169	4.9%	$255,691,016	16.8%	$181,425,594	40.9%
$20 benchmark	$659,610,412	$601,666,244	8.8%	$474,148,364	28.1%	$316,300,649	52.0%
HH Income	$32,965	$58,827		$42,000		$32,292	
North Carolina							
$40 benchmark	$142,022,304	$139,812,182	1.6%	$117,842,042	17.0%	$84,514,709	40.5%
$30 benchmark	$282,980,936	$271,445,356	4.1%	$216,274,808	23.6%	$148,799,552	47.4%
$20 benchmark	$529,685,378	$488,467,059	7.8%	$372,759,555	29.6%	$251,830,093	52.5%
HH Income	$26,647	$40,257		$29,850		$25,062	

Analysis of High Cost Support at Selected Income Levels

State	Total Support for 100% CBGs *	Total Support for Bottom 90%	% Difference (100%-90%)/100%	Total Support for Bottom 70%	% Difference (100%-70%)/100%	Total Support for Bottom 50%	% Difference (100%-50%)/100%
North Dakota							
$40 benchmark	$57,124,436	$52,749,783	7.7%	$40,702,308	28.7%	$29,267,941	48.8%
$30 benchmark	$70,790,328	$64,832,043	8.4%	$50,405,243	28.8%	$36,173,375	48.9%
$20 benchmark	$92,077,432	$83,042,027	9.8%	$64,617,956	29.8%	$45,852,234	50.2%
HH Income	$23,213	$33,534		$25,625		$21,591	
Ohio							
$40 benchmark	$128,393,296	$124,464,191	3.1%	$90,993,485	29.1%	$47,255,869	63.2%
$30 benchmark	$272,185,011	$254,910,124	6.3%	$182,806,970	32.8%	$97,643,260	64.1%
$20 benchmark	$614,504,598	$551,939,009	10.2%	$393,651,819	35.9%	$227,060,678	63.0%
HH Income	$28,706	$43,854		$33,113		$27,188	
Oklahoma							
$40 benchmark	$100,984,247	$97,175,241	3.8%	$77,387,369	23.4%	$52,178,889	48.3%
$30 benchmark	$158,856,469	$150,239,913	5.4%	$117,406,471	26.1%	$78,970,826	50.3%
$20 benchmark	$267,259,957	$244,439,341	8.5%	$184,563,748	30.9%	$123,368,880	53.8%
HH Income	$23,577	$37,917		$26,818		$21,333	
Oregon							
$40 benchmark	$77,502,634	$74,468,504	3.9%	$60,656,911	21.7%	$42,022,874	45.8%
$30 benchmark	$119,637,078	$112,071,803	6.3%	$87,342,513	27.0%	$59,088,440	50.6%
$20 benchmark	$216,925,875	$196,290,456	9.5%	$146,591,534	32.4%	$97,633,205	55.0%
HH Income	$27,250	$40,369		$30,683		$25,500	
Pennsylvania							
$40 benchmark	$163,593,183	$161,735,506	1.1%	$140,441,627	14.2%	$99,357,855	39.3%
$30 benchmark	$301,994,936	$291,026,075	3.6%	$236,166,621	21.8%	$158,661,874	47.5%
$20 benchmark	$612,775,392	$557,932,048	8.9%	$421,795,962	31.2%	$275,782,389	55.0%
HH Income	$29,069	$44,556		$32,857		$26,908	
Rhode Island							
$40 benchmark	$6,773,314	$5,709,094	15.7%	$2,704,906	60.1%	$408,418	94.0%
$30 benchmark	$15,697,779	$12,913,667	17.7%	$6,365,144	59.5%	$1,789,650	88.6%
$20 benchmark	$43,928,435	$37,439,372	14.8%	$22,651,037	48.4%	$11,111,673	74.7%
HH Income	$32,181	$46,937		$38,047		$32,344	
S. Carolina							
$40 benchmark	$81,374,752	$79,859,400	1.9%	$69,773,460	14.3%	$49,453,270	39.2%
$30 benchmark	$152,970,263	$146,702,315	4.1%	$121,373,606	20.7%	$82,873,632	45.8%
$20 benchmark	$279,168,065	$259,309,606	7.1%	$203,200,964	27.2%	$135,637,576	51.4%
HH Income	$26,256	$40,921		$30,066		$24,659	
S. Dakota							
$40 benchmark	$52,449,770	$49,080,400	6.4%	$38,474,592	26.6%	$27,093,580	48.3%
$30 benchmark	$69,560,205	$64,696,508	7.0%	$50,385,200	27.6%	$35,540,457	48.9%
$20 benchmark	$93,631,437	$85,567,574	8.6%	$65,437,376	30.1%	$46,205,582	50.7%
HH Income	$22,503	$32,009		$24,406		$21,028	
Tennessee							
$40 benchmark	$113,374,821	$110,026,017	3.0%	$93,680,417	17.4%	$63,225,035	44.2%
$30 benchmark	$214,160,251	$202,523,389	5.4%	$163,984,815	23.4%	$108,537,054	49.3%
$20 benchmark	$391,293,772	$358,799,780	8.3%	$277,007,527	29.2%	$181,929,528	53.5%
HH Income	$24,807	$39,861		$28,125		$22,708	
Texas							
$40 benchmark	$272,533,671	$269,453,788	1.1%	$235,680,718	13.5%	$157,627,714	42.2%
$30 benchmark	$464,134,553	$447,839,704	3.5%	$372,965,280	19.6%	$245,034,783	47.2%
$20 benchmark	$965,509,384	$891,069,787	7.7%	$691,340,558	28.4%	$450,580,486	53.3%
HH Income	$27,016	$48,214		$31,827		$24,333	
Utah							
$40 benchmark	$32,825,938	$31,423,462	4.3%	$26,966,791	17.8%	$21,222,410	35.3%
$30 benchmark	$47,672,399	$44,711,790	6.2%	$36,641,951	23.1%	$27,476,772	42.4%
$20 benchmark	$90,499,294	$82,189,321	9.2%	$63,636,313	29.7%	$44,327,961	51.0%
HH Income	$29,470	$44,312		$34,412		$28,150	

Analysis of High Cost Support at Selected Income Levels

State	Total Support for 100% CBGs *	Total Support for Bottom 90%	% Difference (100%-90%)/100%	Total Support for Bottom 70%	% Difference (100%-70%)/100%	Total Support for Bottom 50%	% Difference (100%-50%)/100%
Vermont							
$40 benchmark	$35,858,893	$32,685,777	8.8%	$24,752,762	31.0%	$16,816,312	53.1%
$30 benchmark	$51,951,872	$46,883,995	9.8%	$34,940,866	32.7%	$23,580,297	54.6%
$20 benchmark	$72,293,239	$64,524,458	10.7%	$47,692,436	34.0%	$32,286,176	55.3%
HH Income	$29,792	$40,625		$32,436		$28,687	
Virginia							
$40 benchmark	$99,618,917	$98,929,941	0.7%	$88,177,839	11.5%	$66,910,433	32.8%
$30 benchmark	$188,054,501	$183,948,384	2.2%	$157,874,688	16.0%	$115,073,395	38.8%
$20 benchmark	$377,184,292	$352,557,139	6.5%	$280,475,018	25.6%	$194,133,913	48.5%
HH Income	$33,328	$57,273		$37,467		$28,250	
Washington							
$40 benchmark	$76,625,619	$75,376,447	1.6%	$67,485,025	11.9%	$52,213,427	31.9%
$30 benchmark	$131,124,036	$125,492,230	4.3%	$106,923,569	18.5%	$77,505,072	40.9%
$20 benchmark	$279,458,573	$255,546,319	8.6%	$201,634,397	27.8%	$137,178,995	50.9%
HH Income	$31,183	$47,574		$36,719		$30,515	
W. Virginia							
$40 benchmark	$96,501,878	$93,716,019	2.9%	$80,700,189	16.4%	$60,928,788	36.9%
$30 benchmark	$145,860,346	$139,234,319	4.5%	$116,636,074	20.0%	$86,007,793	41.0%
$20 benchmark	$214,204,712	$200,089,520	6.6%	$163,064,767	23.9%	$117,928,734	44.9%
HH Income	$20,795	$31,354		$23,750		$19,907	
Wisconsin							
$40 benchmark	$107,453,939	$104,539,244	2.7%	$89,461,090	16.7%	$67,391,924	37.3%
$30 benchmark	$187,460,245	$176,408,539	5.9%	$142,686,775	23.9%	$102,579,273	45.3%
$20 benchmark	$343,209,336	$312,836,320	8.8%	$240,846,022	29.8%	$166,029,408	51.6%
HH Income	$29,442	$43,375		$33,250		$28,113	
Wyoming							
$40 benchmark	$27,183,736	$24,692,380	9.2%	$17,248,586	36.5%	$11,553,327	57.5%
$30 benchmark	$35,529,658	$32,099,703	9.7%	$21,908,201	38.3%	$14,497,327	59.2%
$20 benchmark	$50,296,544	$45,096,994	10.3%	$30,377,360	39.6%	$19,642,193	60.9%
HH Income	$27,096	$41,442		$30,441		$24,635	
Entire US:							
$40 benchmark	**$4,258,662,822**	**$4,122,592,060**	**3.2%**	**$3,477,992,715**	**18.3%**	**$2,451,286,341**	**42.4%**
$30 benchmark	**$7,424,505,733**	**$7,012,037,730**	**5.6%**	**$5,658,661,455**	**23.8%**	**$3,860,898,446**	**48.0%**
$20 benchmark	**$14,664,182,818**	**$13,352,047,237**	**8.9%**	**$10,195,898,803**	**30.5%**	**$6,763,365,941**	**53.9%**

*Note: Household income at the 100% level is the median income for that state.
At the 90%, 70%, and 50% levels, the household income is the highest income in that bracket.

Sources: BCM2, 1990 Census of Population and Housing Summary Tape File 3A

APPENDIX B

Description of methodological approach

The BCM2 with the unadjusted default values was used to compute the cost of providing basic local exchange service in each of the nation's more than 200,000 census block groups (CBGs).[15] These cost results were compared with three different monthly revenue benchmarks — $20, $30 and $40 — in order to estimate the universal service funding (USF) requirement on a state-by-state basis (i.e., to generate the "default" results of the BCM2). This is the "baseline" case — i.e., the scenario whereby *all* households in high-cost areas would be eligible for subsidization, regardless of their income level.

Because the BCM2 does not include any of the income data from the Census data base for the CBGs whose proxy costs the Model undertakes to evaluate, this data was obtained from the Census Bureau and integrated with the BCM2 data base. Median household income was selected as an appropriate metric from the income data contained in the Census CBG data base.[16] The purpose of the analysis was to overlay CBG income and CBG cost. Three different possible income guidelines for determining high-cost eligibility were defined and analyzed:

1. Only those CBGs with incomes below the 50th percentile (i.e., below the median income level) for each state would be eligible for high-cost support.[17]

2. Only those CBGs with incomes below the 70th percentile for each state would be eligible for high-cost support (i.e., the highest 30% would be ineligible).

3. Only those CBGs with incomes below the 90th percentile for each state would be eligible for high-cost support (i.e., the highest 10% would be ineligible).

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15. Use of the BCM2 Model in no way implies endorsement of this model for determination of high-cost support funding. In fact, there is no reason to expect the pattern or overall magnitude of the results of this study to be substantially different if another cost proxy model is adopted. The BCM2 is designed in such a way as to a permit the modification of certain "user-specified" values. While the BCM2 default values were not revised for this analysis, their use does not in any sense constitute agreement with these values.

16. *1990 Census of Population and Housing Summary Tape File 3A.* These data provide the most recent income statistics available from the Census Bureau. Mean and median household incomes have risen in nominal terms from 1990 to 1995, (see Current Population Reports, Series P-60, Income Statistics Branch/HHES Division, U.S. Bureau of the Census) and therefore there is a temporal mismatch between the costs examined (which are based upon estimates made in 1997) and the incomes examined (which were reported in 1990). One would expect, therefore, that the "actual" average incomes are greater than those reported in 1990. This mismatch of years does not influence the results of our analysis because we examine the income stratification rather than the income level, but it may influence any judgments that regulators may make about the appropriate income guidelines for a high-cost fund.

17. Because the analysis relies upon a ranking of the CBGs, the 50th, 70th, and 90th percentiles do not include 50%, 70% and 90% of the households, but rather 50%, 70%, and 90% of the CBGs.

Appendix B

While the median household income for the US as a whole is $30,056, there is considerable variation in income levels from state to state. For example, Connecticut has the highest median household income ($41,721), while Mississippi has the lowest ($20,136). Since income levels tend to bear at least some relationship with the cost of living in a particular area (such as a state), the income distribution within each state was used to identify those CBGs falling below the three income thresholds (50th, 70th and 90th percentiles, respectively). For computational purposes, the 50%, 30%, and 10% of the CBGs, respectively, with the highest incomes, were identified to provide a reasonable approximation of comparing CBG incomes to the statewide income that corresponds with the 50th, 70th and 90th percentiles.

It should also be noted that all of the average income figures are biased downward because of the way the US Census Bureau treats incomes over $150,000. The Census Bureau places all those with incomes above $150,000 into the same bracket. Because of this grouping, a household with a $1-million income is given the same statistical weighting as one with a $150,000 income. Thus, very high incomes cannot be accurately captured in the analysis. Taking this fact into consideration would mean that many states and individual CBGs are even wealthier than they are represented to be by the Census data.[18] This fact does not, however, affect the results because the CBGs in this income bracket would be assigned to the top percentiles, regardless of the "correct" absolute median average. However, it is relevant to an assessment of affordability and to the design of fair income guidelines.

Table B-1 below summarizes state-specific data and results for the country.[19]

18. Furthermore, as noted previously, the incomes are those that were reported in 1990.

19. The median income for each state and the income cap for the 50th percentile do not match because the state median income is based upon a ranking of households, while the USF support analysis discussed in this paper relies upon a ranking of CBGs.

Appendix B

TABLE B-1
RESULTS OF STATE-SPECIFIC ANALYSIS

CERTIFICATE OF SERVICE

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